





groups of pixels, each group having a predetermined plurality of pixels, compresses the images in a lateral direction by setting each group as two pixels, and extracts a maximum value and a minimum value of gradations of pixels in the order of appearance in each group, as gradations of the two pixels.

10. The target recognition apparatus according to claim 1, wherein

the image compressing unit puts pixels that continue in a lateral direction in the images into groups of pixels, each group having a predetermined plurality of pixels, compresses the images in a lateral direction by setting each group as two pixels, and extracts two gradations between which there is a largest change in each group, as gradations of the two pixels.

11. The target recognition apparatus according to claim 1, further comprising:

a searching area setting unit for setting a target searching area according to images that have been compressed by the image compressing unit.

12. The target recognition apparatus according to claim 11, wherein

the searching area setting unit sets a whole surface of an image as a target searching area.

13. The target recognition apparatus according to claim 11, wherein

the searching area setting unit sets a lane on which the vehicle runs as a target searching area.

14. The target recognition apparatus according to claim 11, wherein

the searching area setting unit sets an area to which the vehicle proceeds as a target searching area.

15. The target recognition apparatus according to claim 11, wherein

the searching area setting unit is setting

a target searching area based on an area in which the target detecting unit has both detected ends of a target last time.

the searching area setting unit sets an area in which another decision unit has decided that there is a possibility of the existence of a target, as a searching area.

the target detecting unit detects both ends of a target by detecting edges.

the target detecting unit detects a range in a lateral direction in which a variance in added values of gradations in a vertical direction is not larger than a constant value, as an existence position of a target.

the target detecting unit detects a position in a lateral direction at which an added value of gradations in a vertical direction exceeds a constant value, and a position in a lateral direction at which the added value is less than the constant value, as both ends of a target.

the target detecting unit detects a range in a lateral direction in which a variance in average values of gradations in a vertical direction is not larger than a constant value, as an existence position of a target.

the target detecting unit detects  
positions in a lateral direction at which an added value  
of gradations in a vertical direction exceeds a constant  
value whose adjacent position in a lateral direction at  
5 which the added value is less than the constant value, as  
both ends of a target.